Invariants of algebraic varieties

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This is a recent joint work with Jie-Tai Yu. We address the following two general problems: given two algebraic varieties in C^n, find out whether or not they are (1) isomorphic; (2) equivalent under an automorphism of C^n. Although a complete solution of either of those problems is out of the question at this time, we give some handy and useful invariants of isomorphic as well as of equivalent varieties. Furthermore, and more importantly, we give a universal procedure for obtaining all possible algebraic varieties isomorphic to a given one, and use it to construct numerous examples of hypersurfaces with non-unique embeddings in C^n, with a view to a counterexample to the Embedding conjecture of Abhyankar and Sathaye.